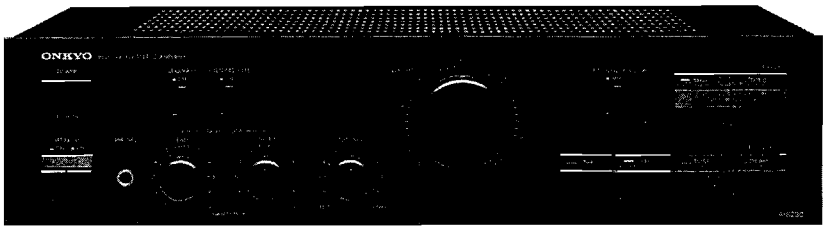
A-8230

SERIAL No. 3206

# ONKYO® SERVICE MANUAL

## Integrated Stereo Amplifier
## MODEL A-8230

ONKY -00923



Silver and Black models

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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ONKYO®
AUDIO COMPONENTS

# SPECIFICATIONS

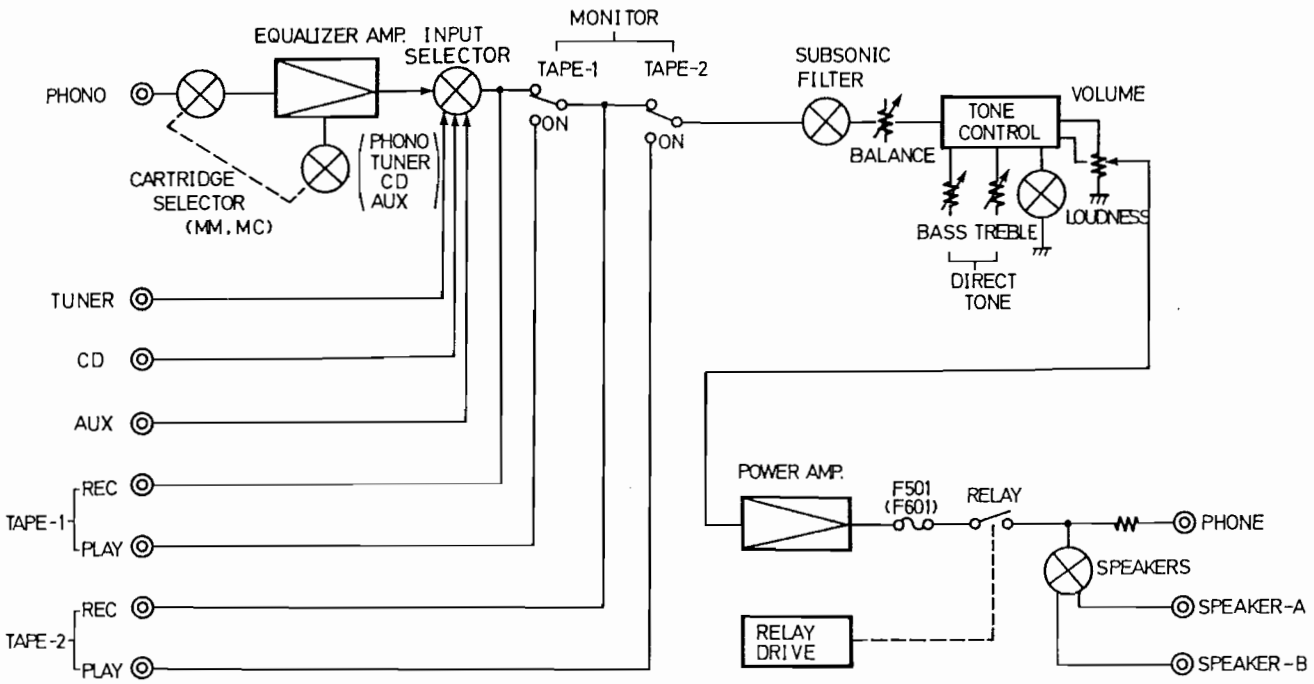
| | |
|---|---|
| Music Power Output: | 2 x 120 watts at 4 ohms, 1kHz (DIN)<br>2 x 80 watts at 8 ohms, 1kHz (DIN) |
| Continuous Power Output: | 2 x 77 watts at 4 ohms, 1kHz (DIN)<br>2 x 55 watts at 8 ohms, 1kHz (DIN)<br>50 watts per channel, min, RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.06% THD. |
| Total Harmonic Distortion: | 0.06% at 50 watts |
| IM Distortion: | 0.06% at 50 watts |
| Damping Factor: | 40 at 8 ohms |
| Frequency Response: | 15 – 30,000Hz ± 1dB |
| Sensitivity and Impedance: | Phono: (MM) 2.5mV/50 kohms<br>(MC) 350μV/330 ohms (European models)<br>Tuner/CD/AUX: 150mV/50 kohms<br>Tape Play: 150mV/50 kohms<br>Tape Rec: 150mV/3.5 kohms (phono) |
| Phono Overload: | 150mV RMS at 1kHz, 0.06% THD (MM) |
| Bass Control: | ±7dB at 100Hz |
| Treble Control: | ±8dB at 10,000Hz |
| Signal to Noise Ratio: | Phono: (MM) 75dB (IHF A-202, 5mV input, 1 watt output)<br>Tuner & Tape: 80dB (IHF A-202, 0.5V input, 1 watt output) |
| Loudness Control: | +6dB at 70Hz/+5dB at 10kHz |
| Subsonic Filter: | 15Hz (6dB/Octave) |

**General**

| | |
|---|---|
| Power Supply: | AC 220V, 50Hz |
| Semiconductors: | IC: 3 TR: 2 Diode: 19 |
| Dimensions: | 435(W) x 112(H) x 278(D)mm<br>17-1/8" x 4-7/16" x 10-15/16" |
| Weight: | 6.6kg. (14.5lbs.) |

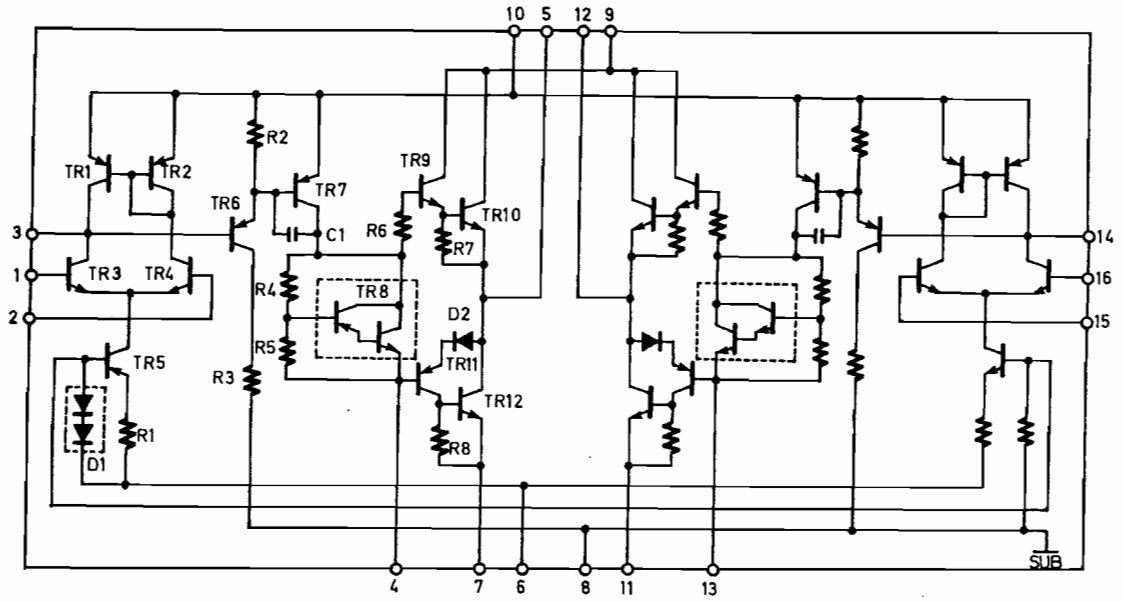
Specifications and features are subject to change without notice.

# BLOCK DIAGRAM

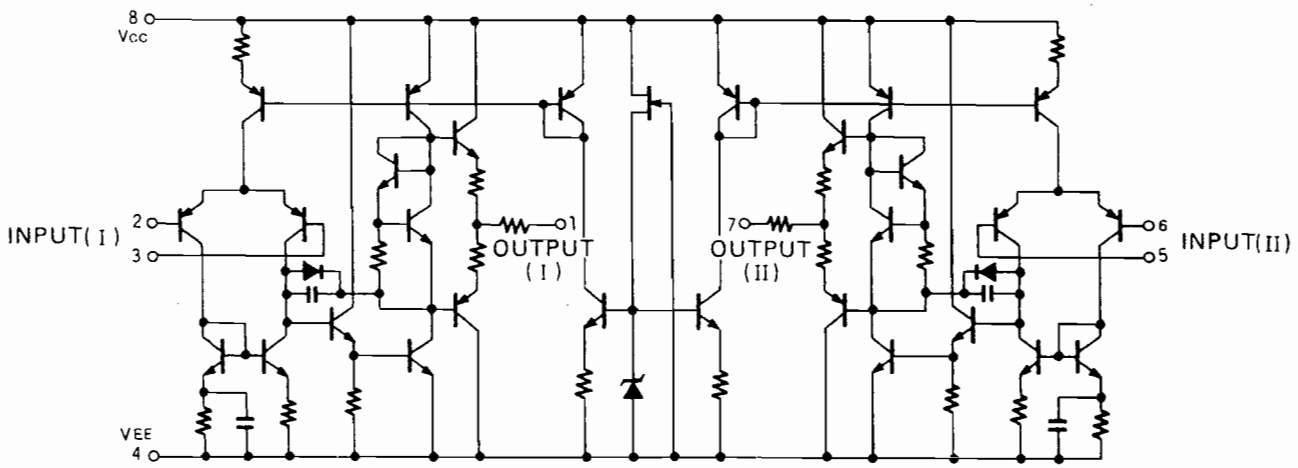


# IC BLOCK DIAGRAM

## STK-4893




## NJM-4559DX



# PRECAUTIONS

## 1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| F902 | 252074 | 2A-SE-EAK, Primary fuse |
| F905, F906 | 252078 | 5A-SE-EAK, Secondary fuse |
| F501, F601 | 252077 | 4A-SE-EAK, Speaker fuse |

# CHASSIS-EXPLODED VIEW-PARTS LIST

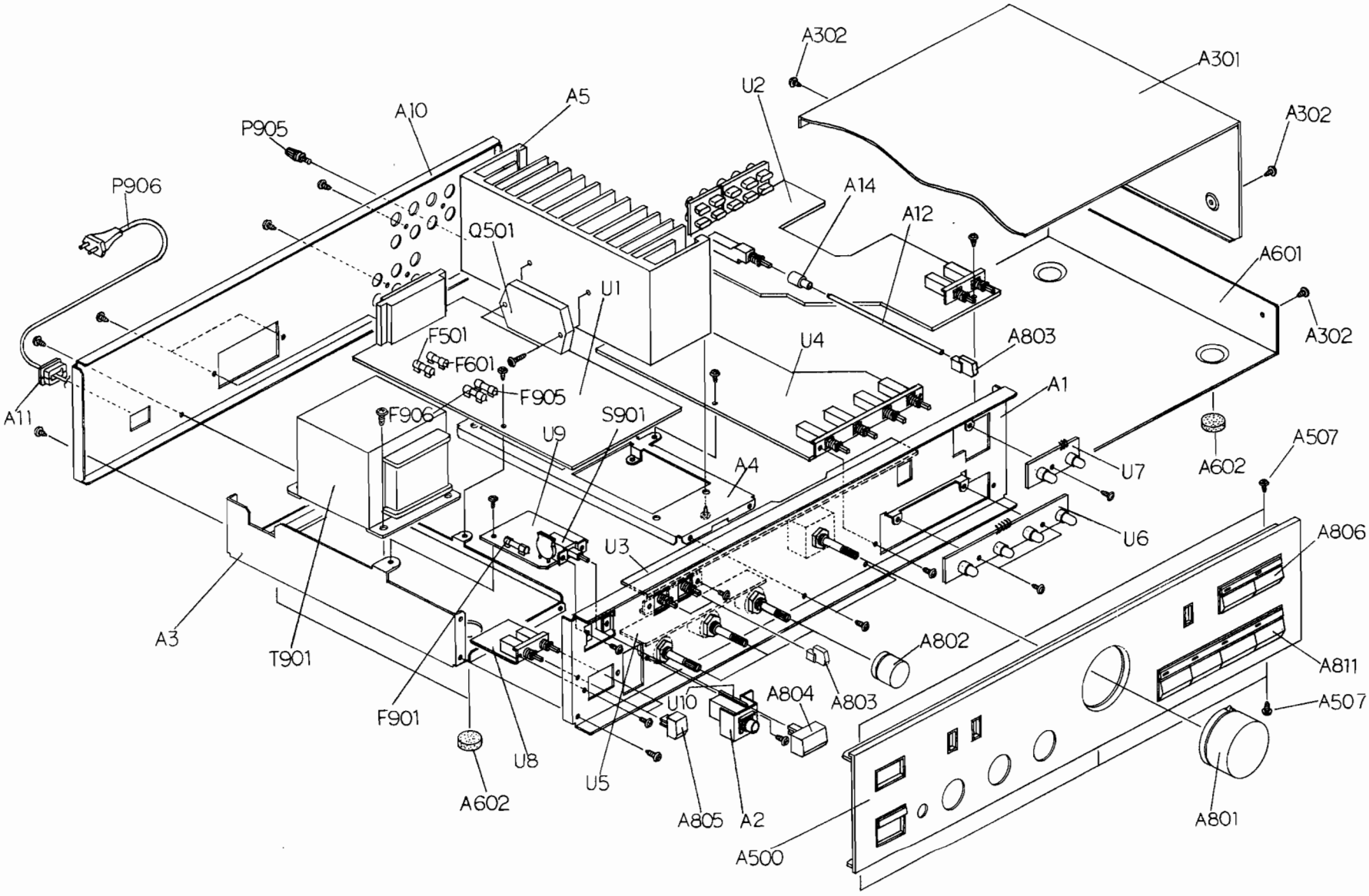
| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A1 | 27110246A | Front bracket |
| A2 | 27140995A | Bracket, HP |
| A3 | 27130393 | Bracket, L |
| A4 | 27130394A | Bracket, H |
| A5 | 27160171 | Radiator |
| A10 | 27120703A | Back panel |
| ⚠ A11 | 27300750 | Strainrelief |
| A12 | 27260174A | Shaft |
| A14 | 28320135 | Joint |
| A301 | 28184279 | Top cover |
| | 2818428D | Top cover [Black] |
| A302 | 834430068 | 3TTS+6B (BC), Tapping screw |
| A500 | 17952121 | Front panel ass'y |
| | 17932121 | Front panel ass'y [Black] |
| A507 | 834430068 | 3TTS+6B (BC), Tapping screw |
| A601 | 27170202A | Bottom board |
| A602 | 27175039 | Bottom leg |
| A603 | 834430068 | 3TTS+6B (BC), Tapping screw |
| A801 | 28322051A | Knob, VOL |
| | 28322058A | Knob, VOL [Black] |
| A802 | 28322052 | Knob, TONE |
| | 28322059 | Knob, TONE [Black] |
| A803 | 28322066A | Knob, PUSH |
| | 28322067A | Knob, PUSH [Black] |
| A804 | 28321928 | Knob, POWER |
| | 28321905A | Knob, POWER [Black] |
| A805 | 28322053A | Knob, SP |
| | 28322060A | Knob, SP [Black] |
| A806 | 28322054A | Knob ass'y, TAPE |
| | 28322061A | Knob ass'y, TAPE [Black] |
| A811 | 28322056A | Knob ass'y, SEL |
| | 28322063A | Knob ass'y, SEL [Black] |
| Q501 (Q601) | 22036 | STK-4893, IC |
| ⚠ T901 | 230883 | NPT-878G, Power transformer |

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| ⚠ S901 | 25035398 | NPS-111-L362P, Power switch |
| P905 | 25060044 | Ground terminal |
| ⚠ P906 | 253128 | AS-CEE, Power supply cable |
| F501, F601 | 252077 | 4A-SE-EAK, Speaker fuse |
| ⚠ F902 | 252074 | 2A-SE-EAK, Primary fuse |
| F905, F906 | 252078 | 5A-SE-EAK, Secondary fuse |
| U1 | 17952533B | NAAF-2333B, Power amplifier pc board ass'y |
| U2 | 179525334B | NAEQ-2334B, Equalizer amplifier pc board ass'y |
| U3 | 17952535A | NAVR-2335A, Subsonic/Loudness switch pc board ass'y |
| U4 | 17954536A | NASW-2336A, Input selector switch pc board ass'y |
| U5 | 17948537 | NATC-2337, Tone controle pc board ass'y |
| U6 | 17948538 | NALED-2338, LED display pc board ass'y |
| U7 | 17948539 | NALED-2339, LED display pc board ass'y |
| U8 | 17948540 | NASW-2340, Speaker switch pc board ass'y |
| U9 | 17954541A | NASW-2341A, Power switch pc board ass'y |
| U10 | 17948542 | NAHP-2342, Headphone jack pc board ass'y |

**NOTE:** [BLACK]: Only Black model

**NOTE:** THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

# CHASSIS-EXPLODED VIEW



# PRINTED CIRCUIT BOARD PARTS LIST

## POWER AMP. & POWER SUPPLY (NAAF-2333B) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **Transisters** | |
| Q701 | 2211255 | 2SC1815GR |
| Q702 | 2211254 | 2SC1815Y |
| | **Diodes** | |
| D701, D703 | 223150 or | US1040 or |
| | 223145 or | 1S2076TD or |
| | 223124 | 1S2473 |
| D704 | 2239733 or | RD20EB3 or |
| | 2241212 | GZA20Y |
| D911~D916 | 223863 | GP-30DL |
| D917, D918 | 2243273 or | MTZ18C or |
| | 2241191 or | GZA-18X or |
| | 2241192 or | GZA-18Y or |
| | 2239713 | RD18EB3 |
| D919, D920 | 223880 | GP101N4003 |
| | **Coils** | |
| L501, L601 | 231001 | S-1.3B |
| | **Capacitors** | |
| C501, C601 | 352780479 | 4.7μF, 50V, Elect. |
| C505, C605 | 3500080 | 100μF, 10V, Elect. |
| C508, C608 | 352784709 | 47μF, 50V, Elect. |
| C509, C609 | 371124735 | 0.047μF, 50V, MY |
| C511, C514 | 352781009 | 10μF, 50V, Elect. |
| C512, C515 | 352781019 | 100μF, 50V, Elect. |
| C701 | 352782209 | 22μF, 50V, Elect. |
| C702 | 352780339 | 3.3μF, 50V, Elect. |
| C912, C913 | 3504178 | 10000μF, 50V, Elect. |
| C914, C915 | 352761019 | 100μF, 35V, Elect. |
| C916, C917 | 352752219 | 220μF, 25V, Elect. |
| C921 | 352782219 | 220μF, 50V, Elect. |
| | **Resistors** | |
| R506, R606 | 441523324 | 3.3kΩ, 1/2W, Metal oxide film |
| R507, R607 | 441521024 | 1kΩ, 1/2W, Metal oxide film |
| R508, R608 | 441520824 | 8.2Ω, 1/2W, Metal oxide film |
| R509, R609 | 441520474 | 4.7Ω, 1/2W, Metal oxide film |
| R510 | 441521014 | 100Ω, 1/2W, Metal oxide film |
| R511 | 441525614 | 560Ω, 1/2W, Metal oxide film |
| R704 | 441626814 | 680Ω, 1W, Metal oxide film |
| R705 | 441523004 | 30Ω, 1/2W, Metal oxide film |
| R911~R914 | 441526214 | 620Ω, 1/2W, Metal oxide film |
| R921 | 441623024 | 3kΩ, 1W, Metal oxide film |
| | **Relay** | |
| RL701 | 25065134 | NRL-2P5A-DC24-05 |
| | **Terminal** | |
| P501 | 25060058 | NTM-8PDML25 |
| | **Fuse holder** | |
| | 25050065 | YSH403T |

## EQUALIZER AMPLIFIER PC BOARD (NAEQ-2334B) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **IC** | |
| Q101 (Q201) | 222605 | TA-7322P |
| | **Coils** | |
| L101, L201 | 231030 | NCH-1070 |
| | **Capacitors** | |
| C101, C201 | 392850477 | 4.7μF, 25V, Elect. |
| C103, C203 | 352723319 | 330μF, 6.3V, Elect. |
| C106, C206 | 371126824 | 6800pF, 50V, MY |
| C107, C207 | 371122034 | 0.02μF, 50V, MY |
| C108, C208 | 392880107 | 1μF, 50V, Elect. |
| C111, C112 | 352751019 | 100μF, 25V, Elect. |
| C151 | 379124735 | 0.047μF, 50V, DEW |
| C209, C210 | 352780339 | 3.3μF, 50V, Elect. |
| | **Resistors** | |
| R961, R962 | 441623024 | 3kΩ, 1W, Metal oxide film |
| | **Switches** | |
| S101 | 25035475 | NPS-162-L437 |
| S102 (S103) | 25035478 | NPS-242-L440 |
| | **Input terminals** | |
| P101 | 25045143 | NPJ-6PDBL56, 6P |
| P102 | 25045142 | NPJ-4PDBL55, 4P |
| | **Socket** | |
| | 25050140 | NJPS-3P-S |

## MUTING SWITCH PC BOARD (NAVR-2335A) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| C301, C401 | 352781599 | 0.15μF, 50V, Capacitor Elect. |
| R306 (R406) | 5148099 | N16RGM100KBTP35, Variable resistor |
| S302, S303 | 25035376 | NPS-222-L340, Subsonic/ Loudness switch |

## INPUT SELECTOR SWITCH PC BOARD (NASW-2336A) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| R951 | 441630724 | 3.0kΩ, 1W, Metal oxide film resistor |
| S111 (S112, S113 S114) | 25035476 | NPS-442-L438, Selector switch |
| P111 | 25045143 | NPJ-6PDBL56, Input terminal |

## TONE CONTROL PC BOARD (NATC-2337) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **Capacitors** | |
| C351, C451 | 371121235 | 0.012μF, 50V, MY |
| C352, C452 | 371123935 | 0.039μF, 50V, MY |
| C353, C453 | 371121025 | 1000pF, 50V, MY |
| C354, C454 | 371126825 | 6800pF, 50V, MY |
| | **Resistors** | |
| R351 (R451) | 5146052 | N16RLC250KWTP35, Variable |
| R352, (R353, R452, R453) | 5148104 | N16RQMC110K180K35, Variable |
| R354 (R454) | 5148105 | N16RGMC219K35, Variable |

## LED DISPLAY PC BOARD (NALED-2338) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **LEDs** | |
| D951 ~ D954 | 225174 or 225173 | SLR55MC3N or SLR55MC3M |
| | **Etc.** | |
| | 27270071 | Spacer, LED |

## LED DISPLAY PC BOARD (NALED-2339) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **LEDs** | |
| D961, D962 | 225167RB or 225167RC | GL-5HY10-RB or GL-5HY10-RC |
| | **Etc.** | |
| | 27270071 | Spacer, LED |

## SPEAKER SWITCH PC BOARD (NASW-2340) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| | **Switch** | |
| S501 (S502) | 25035477 | NPS-222-L439 |

## POWER SWITCH PC BOARD (NASW-2341A) – PARTS LIST

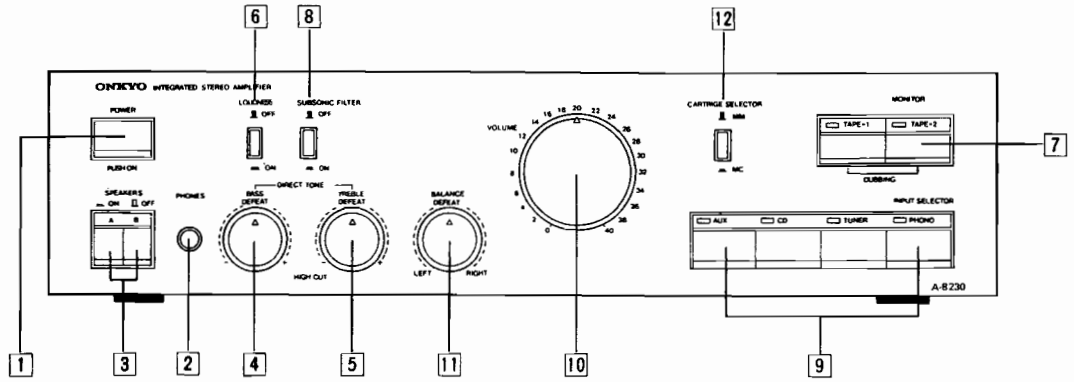
| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| ⚠ C901 | 3500065A | 0.01μF, AC400V, Capacitor |
| ⚠ C901a | 27300601 | SB-1925, Capacitor cover |
| ⚠ S901 | 25035398 | NPS-111-L362P, Power switch |
| ⚠ | 25050065 | YSH403T, Fuse holder |
| | 25060092 | NTM-1533, Terminal |

## HEADPHONE JACK PC BOARD (NAHP-2342) – PARTS LIST

| CIRCUIT NO. | PART NO. | DESCRIPTION |
|---|---|---|
| R551, R651 | 441623914 | 390Ω, 1W, Metal oxide film resistor |
| P551 | 25045139 | HLJ0540-01-010, Headphone jack |

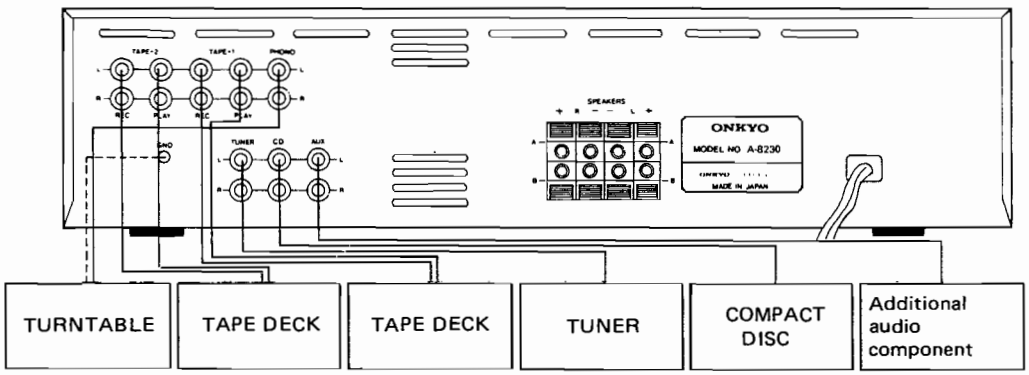
NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

# FRONT PANEL FACILITIES



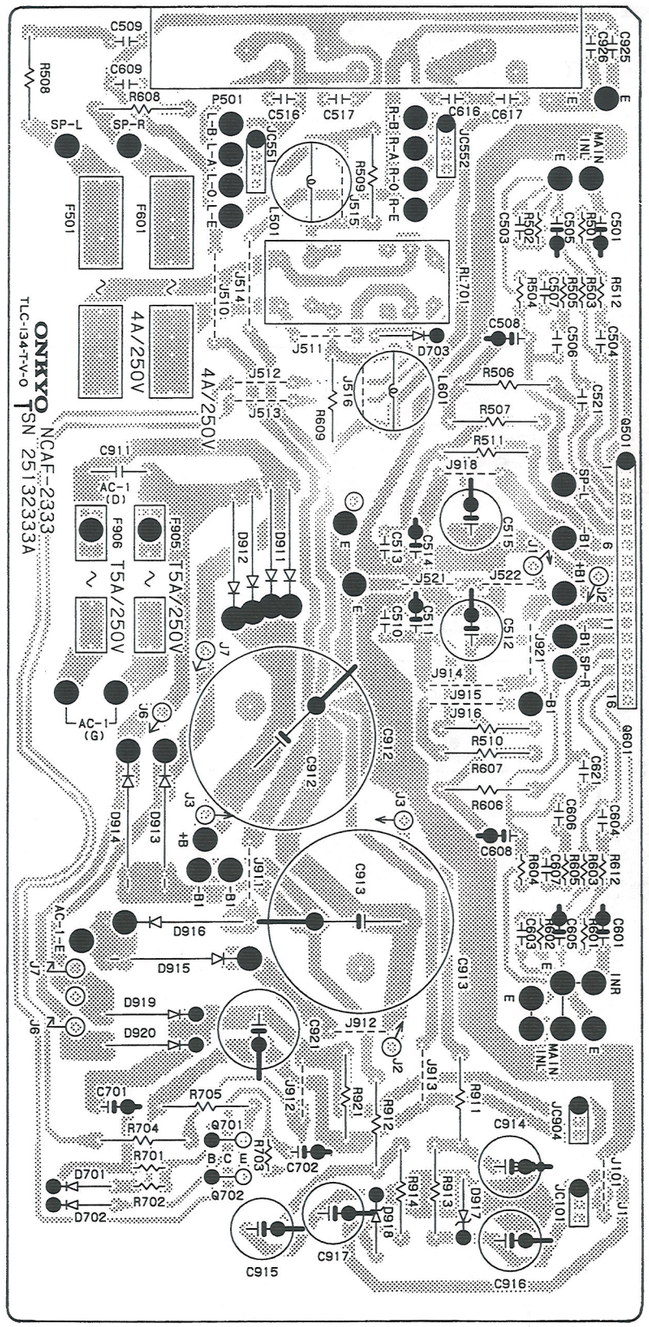

1. Power switch (POWER)
2. Headphone jack (PHONES)
3. Speaker selector (SPEAKERS)
4. Bass control (BASS)
5. Treble control (TREBLE)
6. Loudness control (LOUDNESS)
7. Tape monitor switch and indicator (MONITOR)
8. Subsonic filter (SUBSONIC FILTER)
9. Input selector switches and indicators (INPUT SELECTOR)
10. Volume control (VOLUME)
11. Balance control (BALANCE)
12. Cartridge selector (CARTRIDGE)

# SYSTEM CONNECTIONS

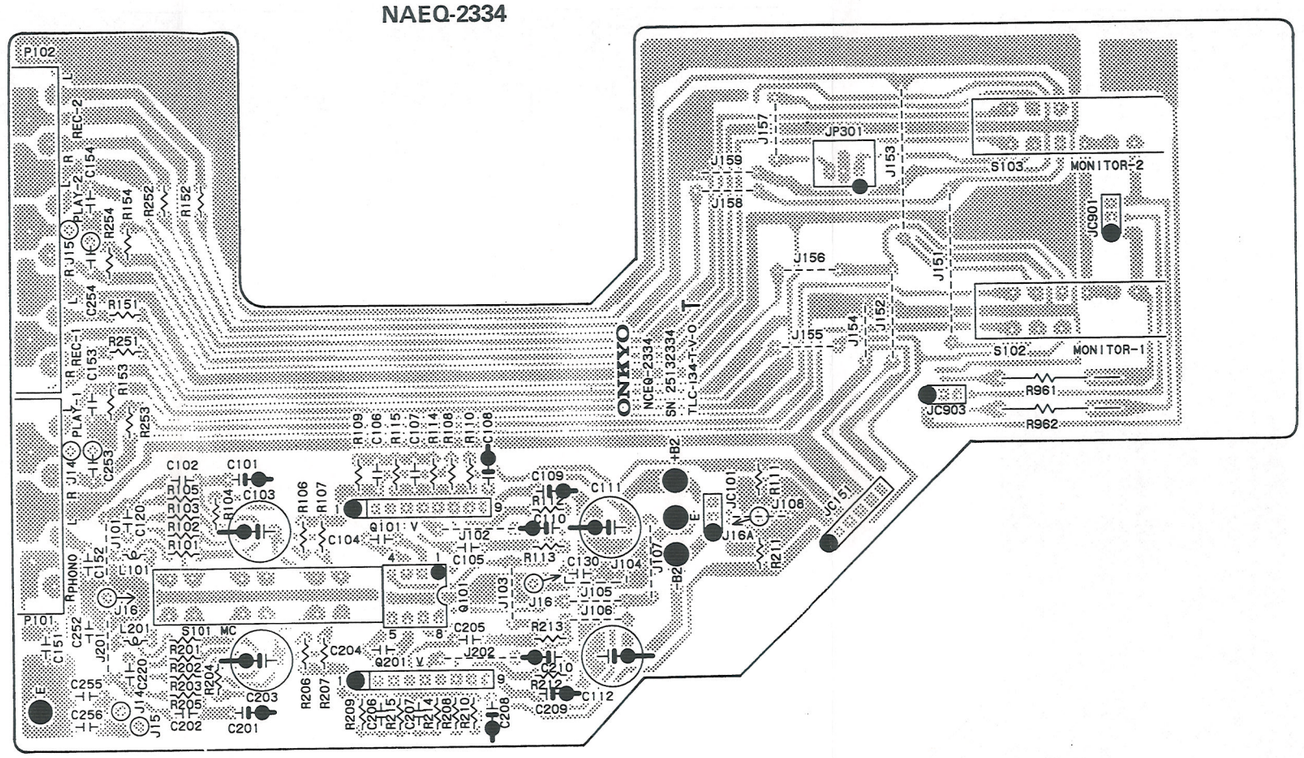


# PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE

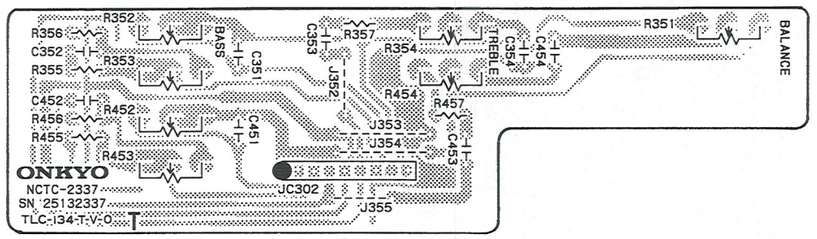
## NAAF-2333



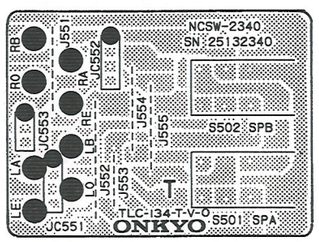

## NAEQ-2334



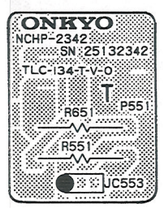

## NATC-2337



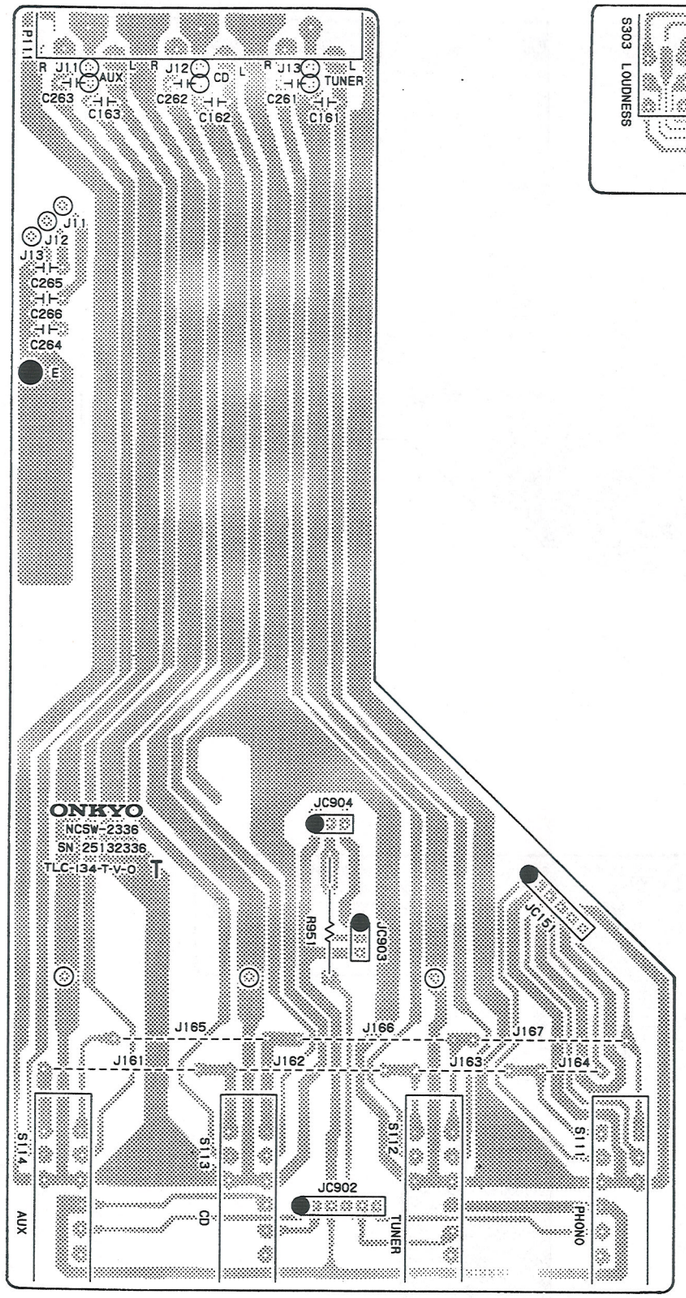

## NASW-2340



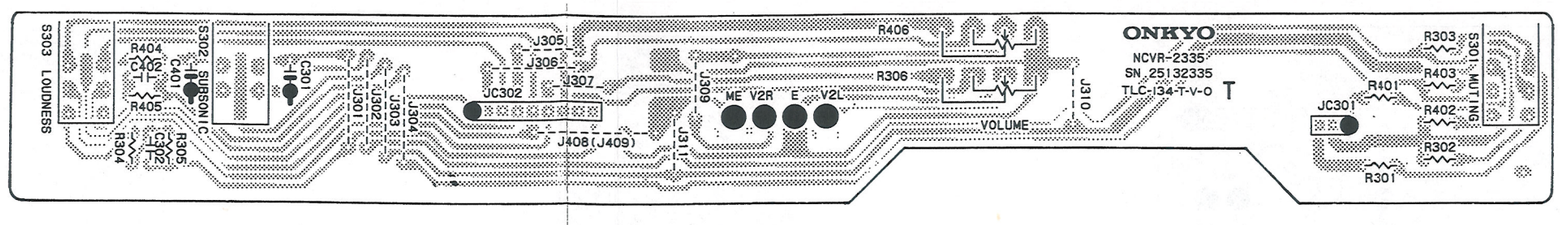

## NAHP-2342



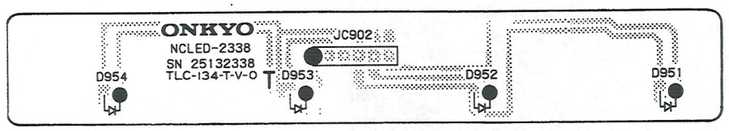
## NAAF-2336



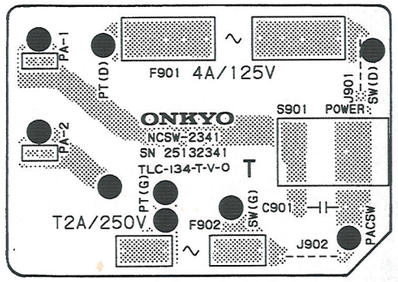

## NAVR-2335



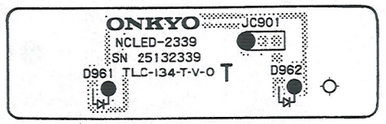

## NALED-2338



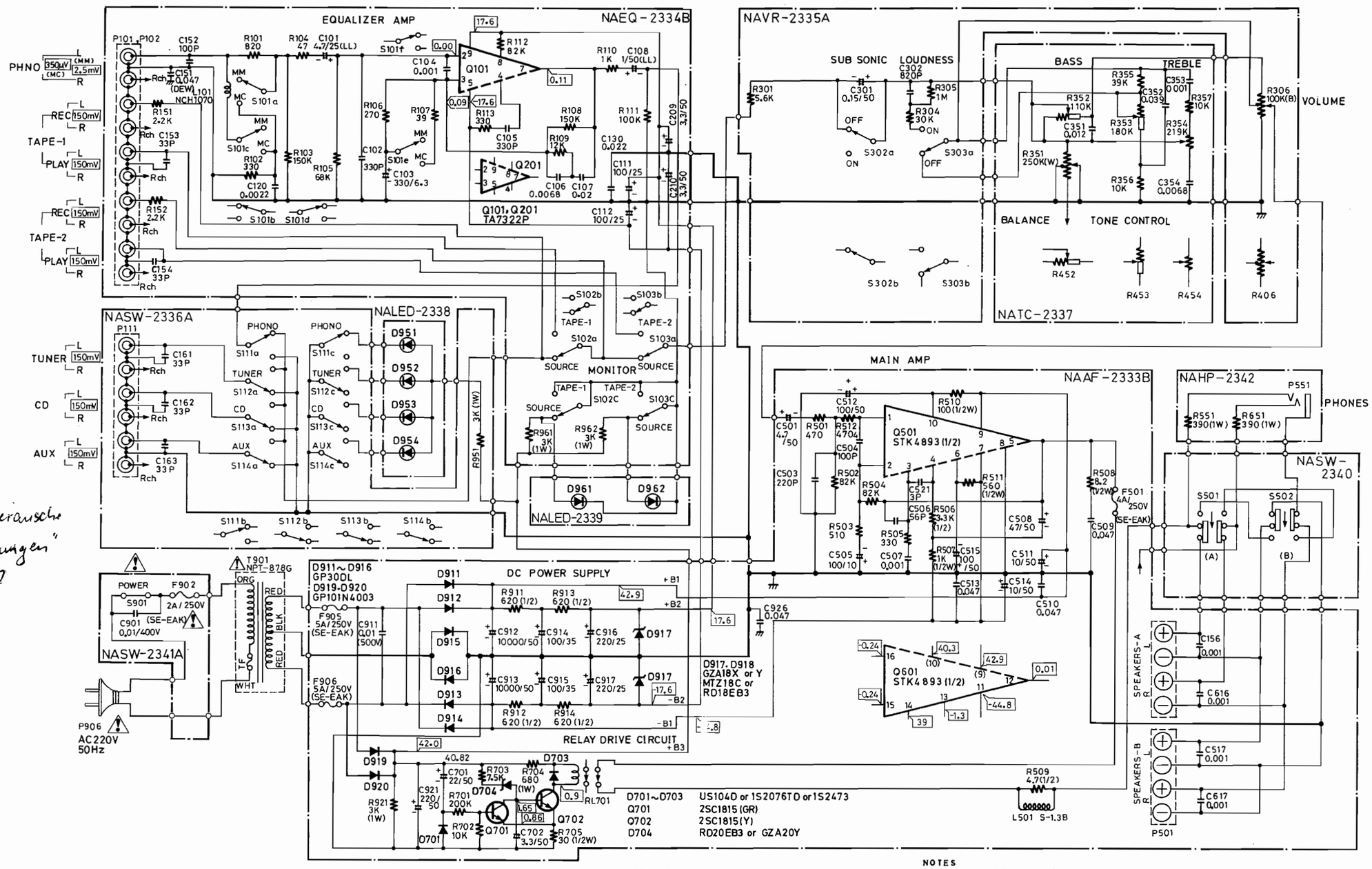

## NASW-2341



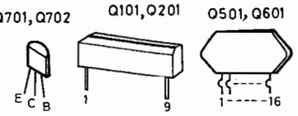

## NALED-2339



# SCHEMATIC DIAGRAM




| NO | FUNCTION | POSITION | NO | FUNCTION | POSITION |
|---|---|---|---|---|---|
| S901 | POWER | OFF ON | S303 | LOUDNESS | OFF ON |
| S102 | MONITOR | SOURCE TAPE-1 | S501 | SPEAKERS A | OFF A |
| S103 | MONITOR | SOURCE TAPE-2 | S502 | SPEAKERS B | OFF B |
| S101 | CARTRIGE | MM MC | S111~S114 | SELECTOR | PH TUN CD AUX |
| S302 | SUBSONIC | OFF ON | | | |

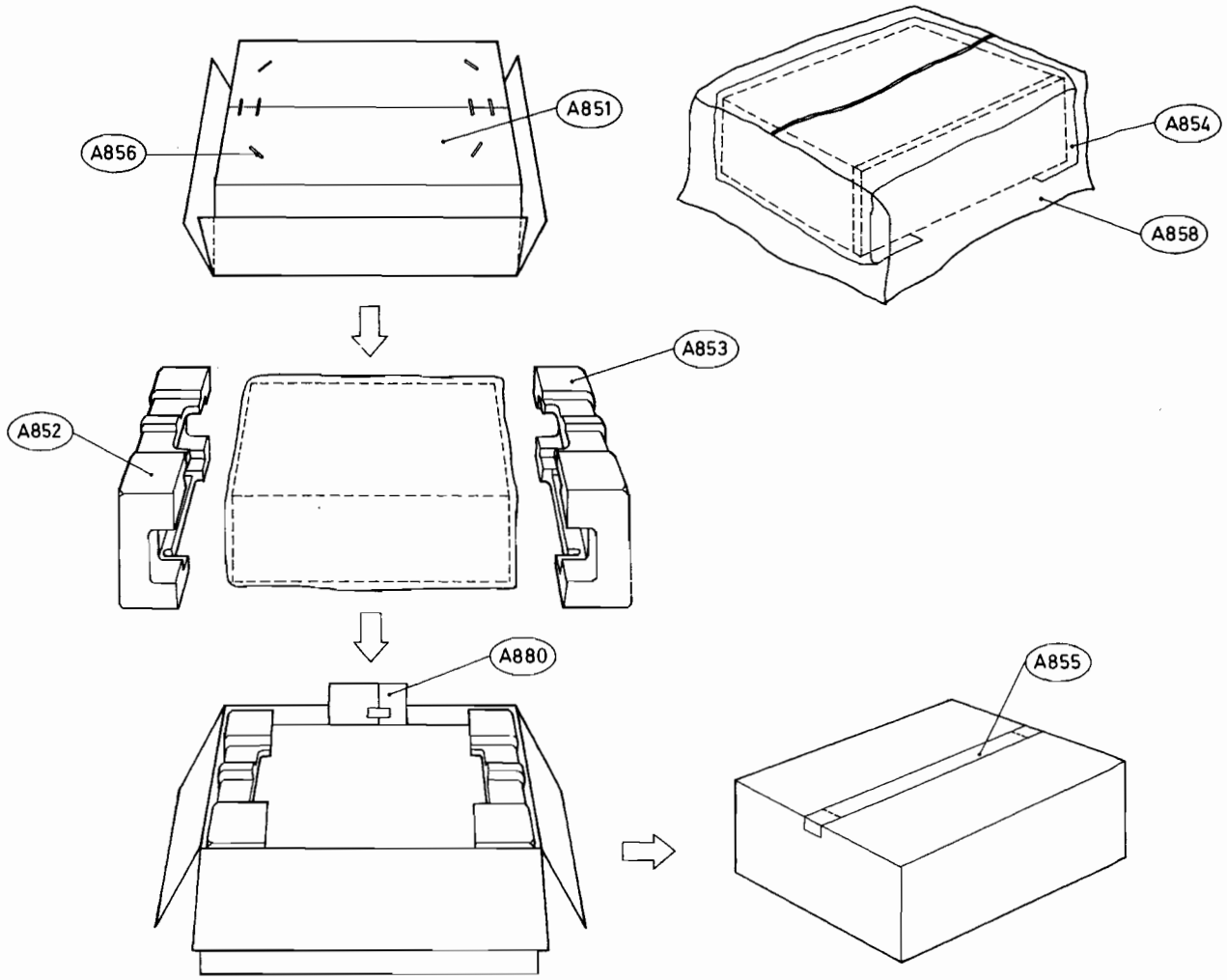



NOTES
- ALL RESISTORS ARE IN OHMS 1/4 WATT or 1/6 WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μF 50WV UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITOR (-⊕-) ARE IN μF/WV.
- ALL DIODES ARE 1S2473 or 1S2076 or US1040 UNLESS OTHERWISE NOTED.
- VOLTAGE (MEASURED WITH V.T.V.M.) □V IS DC VOLTAGE (STOP MODE).
- THE COMPONENTS INDENTIFIED BY MARK △ ARE CRITICAL FOR SAFETY REPLASE ONLY WITH PART NUMBER SPACIFIED.

Pfeiff - Knallgeräusche "Netzeinstreuungen" 91 20/87

**ONKYO CORPORATION**

# PACKING PROCEDURES




| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A851 | 29051108 | Master carton box |
| | 29051109 | Master carton box [BLACK] |
| A852 | 29090746A | Pad, left |
| A853 | 29090747C | Pad, right |
| A854 | 29095380 | 800 x 500, Protection sheet |
| | 29095012-1 | 800 x 500, Protection sheet [BLACK] |
| A855 | 260012 | Damplon tape |
| A856 | 282301 | Sealing hook |
| A858 | 29100063 | 750 x 580, Poly bag |
| A880 | Accessary bag ass'y | |
| | 29340874 | Instruction manual |
| | 29365016 | Warranty card |
| | 29100006 | 350 x 250, Poly bag |
| | 29355093 | FTZ Caution lavel |

**NOTE:** [BLACK] : Black model

A-8230

**ONKYO DEUTSCHLAND GMBH. ELECTRONICS**

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